International Journal of Medical Sciences And Clinical Research
(ISSN – 2771-2265)
VOLUME 03 ISSUE 04 PAGES: 55-61
SJIF IMPACT FACTOR (2021: 5. 694) (2022: 5. 893) (2023: 6. 184)
OCLC – 1121105677
Crossref doi Google Scholar WorldCat MENDELEY
Publisher: Oscar Publishing Services

Journal Website: https://theusajournals.com/index.php/ijmscr

Research Article

FETOPLACENTAL INSUFFICIENCY AND OZONE THERAPY

Submission Date: April 08, 2023, **Accepted Date:** April 13, 2023,
Published Date: April 18, 2023
Crossref doi: https://doi.org/10.37547/ijmscr/Volume03Issue04-08

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ABSTRACT

Placental insufficiency, as well as its complication intrauterine chronic fetal hypoxia, is one of the important problems of modern perinatology. At the same time, its numbers have been increasing in recent years. Purpose - Evaluation of the effect of ozone therapy on the blood circulation of the mother and fetus, fetoplacental blood flow and the degree of adaptation of the fetus to hypoxia according to the results of cardiotocography, ultrasound and dopplerometry. Material and methods: 38 pregnant women who applied to the Department of Obstetrics and Gynecology of Clinic No. 1 of the Samara State Medical University with fetoplacental insufficiency were divided into two groups according to the type of treatment: patients who received complex treatment with ozone therapy, and patients who received standard medical procedures. Results: about a third of women in each group had a combined extragenital pathology. Women in both groups were statistically comparable when compared in terms of general clinical characteristics, basic anthropometric data, extragenital diseases and reproductive history. The most common complications of childbirth were premature rupture of amniotic fluid (4 in the 1st group - 22.2% and 5-25% in the 2nd group) and acute fetal hypoxia (3-16.7% and 3-15%). Conclusion: Thus, the indicators of maternal-fetal circulation, fetoplacental circulation in women in the ozone therapy group were more positive than in the 2nd group, and the level of fetal adaptability to hypoxia was higher.

KEYWORDS

Placental insufficiency (PI), mother-placenta-fetus system, ozone therapy, fetal growth retardation syndrome.

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INTRODUCTION

Placental insufficiency, as well as its complication, intrauterine chronic hypoxia of the fetus, is one of the important problems of modern perinatology. At the same time, its frequency has been increasing in recent years.

According to the research of a number of authors, the frequency of placental insufficiency (PE) is high in women with chronic extragenital pathology, including inflammatory diseases of the urinary system up to 35%, in anemia up to 30%, in women with cardiovascular diseases from 30% - 45 %, up to 25% in women with endocrine pathology [4, 9].

PE is often diagnosed in pregnant women with arterial hypertension, its frequency increases to 27% in the I stage of hypertension, and 59% in the II stage [11]. Severe pathology of the cardiovascular system, heart defects with impaired blood circulation, and chronic hypoxia of the mother lead to a significant increase in morbidity with slowing of fetal development [2, 14, 18].

Among pregnancy complications that lead to PE, the second place in terms of frequency of occurrence is the threat of long-term abortion. Among the risk factors for the delay in fetal development, the frequency of this pathology is up to 23%. A long and repeated increase in myometrial tone leads to a decrease in arterial blood flow to the placenta, and an increase in venous blood flow and congestion. As a result of such hemodynamic disturbances, the gas exchange between the mother and the fetus decreases, which makes it difficult for the fetus to receive oxygen, nutrients, release metabolic products, and contributes to the development of fetal hypoxia [1, 3, 12, 15].

In general, PE can occur as a result of various factors affecting pregnancy and cause many defects in the development of the fetus. Therefore, in this case, it is considered urgent to develop tactics for carrying and treating pregnant women.

Purpose – Evaluation of the effects of ozone therapy on maternal-fetal circulation, fetoplacental circulation, and the degree of fetal hypoxia adaptation.

Materials and metohds: 38 women with chronic fetoplacental insufficiency were analyzed during pregnancy, delivery, postpartum period, fetus and newborns. The research was carried out on the basis of the Department of Obstetrics and Gynecology No. 1 of SamSMU. Women were divided into 2 groups according to the method of treatment: group 1 complex treatment (with ozone therapy) - 18 women and group 2 - 20 pregnant women with chronic placental insufficiency, only traditional treatment methods were used. The control group consisted of 16 women with physiological pregnancy.

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In addition to clinical examinations using standard methods and standard laboratory analysis methods, special research methods - analysis of hemostasiological parameters, biochemical blood analysis and ultrasound examination from instrumental studies (fetal screening), dopplerography of blood flow in the "Mother-placenta-fetus" system, antenatal cardiotocography.

Variation-statistical processing of the obtained data was carried out using the "Statistica 6.0" program by determining the main indicators of variation: average values (M), average errors (m), standard deviation (p). If the p-value is less than 0.05, the difference between the two indicators is considered significant.

Results: The age of the patients ranged from 18 to 39 years, with an average of 27.4±4.1 years. No deviations from the population norms were found in the analysis of mass-height ratio in the examined women. Before pregnancy, the average body weight was 61.2+2.5 kg, the average height was 165.3+5.8 cm. The most common diseases were otolaryngological diseases (33.3% in group 1 and 35% in group 2) and diseases of the urinary system (38.9% and 30% in groups, respectively). A significant share of chronic diseases of the thyroid gland (16.7% and 20%) and gastrointestinal tract (16.7% and 20% in the groups, respectively) is also noteworthy. In addition, we found that in both groups, chronic extragenital pathology was present in several organs: for example, the ratio of the frequency of pathology to the number of patients with chronic pathology in the group was 1.69 and 1.54. In patients with extragenital diseases of different localization, the combination of two was often noted (22.2 and 25% in groups of 4 and 5 women, respectively), less often - the combination of 3 or 4 extragenital chronic diseases (16.77% and 20%, respectively) observed.

Thus, approximately one-third of women in each group had a combined extragenital pathology, a similar percentage of patients did not have a severe somatic background, and a slightly larger part had monoorgan pathology. Statistical intergroup analysis of the structure of extragenital pathology in pregnant women did not reveal significant differences between groups (p>0.05).

The age of menarche was almost the same in the groups and was on average 13.1 ± 1.2 years. In most women, menarche was on time (11 - 61.1% in group 1 and 13 - 65% in group 2), 7 women in groups (38.9% and 35%), respectively, had a late onset of menstruation, between groups no statistically significant differences were found.

Complicated pregnancies with a complicated obstetric and gynecological history and multiple pregnancies had a higher rate of reproductive losses. A high frequency of medical abortion was found, which was 27.8% in group 1 and 20% in group 2, in addition, 33.3% and 35% in the non-developing pregnancy groups, and

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the frequency of spontaneous abortion was 16.7 and 20%, respectively. . Among the complications that occurred during previous pregnancies, there was often a threat of abortion in the early period of pregnancy: 12 - 66.7% in group 1 and 60% in group 2, as well as chronic YY - 8 (44.4%) and 9 (45%) women , respectively by group, p>0.05. Also, cases of premature birth in group 1 - 5 (27.8%), in group 2 - 4 (20.0%) and uterine infection - in 3 women by group, 16.7% and 15%, respectively determined, p>0.05.

It should be noted that women in both groups were statistically compatible when compared in terms of general clinical characteristics, key anthropometric data, extragenital diseases, and reproductive history. The most common complications of labor were premature infusion of amniotic fluid (4 in group 1 - 22.2% and 5-25% in group 2) and acute fetal hypoxia (3-16.7% and 3-15%).

The use of ozone therapy in the complex treatment of YY in pregnant women of group 1 led to a significant increase in the level of hemoglobin, the number of erythrocytes, platelets, and a decrease in the number of leukocytes in peripheral blood, in contrast to pregnant women of group 2, who were treated with traditional methods. At the same time, patients in both groups received iron preparations for anemia, but the duration of therapy in group 1 was 14 days, and in group 2 it was 21 days.

Initially, patients in both groups had decreased serum protein levels (59.3 and 60.4 g/l in the groups, respectively), but none of the patients had clinical manifestations of hypoproteinemia. In pregnant women of group 1, the protein level did not change clinically and was 62.8 g/l after 3 weeks of ozone therapy sessions, p<0.001. In group 2, the amount of total protein in the blood plasma did not change significantly and was 61.2 g / l.

The average level of bilirubin, urea and creatinine decreased significantly after efferent methods of therapy. Biochemical blood analysis before and after treatment showed a slight increase in the total protein content, as well as a decrease in the level of liver enzymes and an improvement in the functioning of the body's natural detoxification systems, expressed by a significant decrease in the level of endogenous intoxication.

CONCLUSIONS

The indicators of maternal-fetal blood circulation, fetoplacental blood circulation in the group of women treated with ozone therapy were positive compared to group 2, and the degree of adaptability of the fetus to hypoxia was higher.

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